

ABSTRACT

20970" 84205002
An economical structural cellular lightweight
concrete with a density of from about 45 lb/ft³ to about
5 90 lb/ft³ and a strength from about 1,000 psi to about
6,000 psi after 28 days of curing at room temperature
and with minimal shrinkage on drying, is described. The
concrete comprises cement, lightweight aggregate with a
density from about 25 lb/ft³ to about 60 lb/ft³, fiber,
10 superplastizer, gas and/or foaming agents, and a
shrinkage reducing agent. The concrete can be
manufactured using facilities for conventional concrete
even with a portion of Portland cement replaced by
industrial by-products or recycled materials such as
15 blast furnace slag, coal fly ash and recycled glasses.
The preferred procedure for making the lightweight
concrete is also described. The products made with the
lightweight concrete have much better ductility and
construction capabilities than conventional concrete
20 products.